

COLUMBIA RIVER TECHNICAL MANAGEMENT TEAM

April 29, 2015

Facilitator's Summary

Facilitator, Emily Plummer; Notes, Tory Hines DS Consulting

The following Facilitator's Summary is intended to capture basic discussion, decisions and actions, as well as point out future actions or issues that may need further discussion at upcoming meetings. These notes are not intended to be the "record" of the meeting, only a reminder for TMT members.

Review of Meeting Minutes

The April 15th Official Minutes and Facilitation Team's summaries were approved.

Spring Creek Hatchery Release

Joe Skalicky, USFWS, provided an update on the Spring Creek Hatchery release. Joe noted that the second and final release of Spring Tule Chinook occurred Monday, April 27th, with a release of 4 million. The release was implemented a week early due to a parasite in the fish; the early release is intended to get the fish to the estuary sooner and allow the salt water to clear any remaining parasites. Joe also noted that the mortality rate increased from .15% per day to .21% per day as a result of the parasite; however the increase in mortality rate was not enough to warrant an even earlier release.

Snake River Flow Augmentation

Mary Mellema, BOR, provided an update on the Snake River Flow Augmentation. She noted this year's augmentation is expected to be 427 maf from the Snake system. The first release will be on 700cfs on May 1st and will be from the Boise River. 2,000cfs will be released from above Milner on May 11th, and the Payette release will occur once the Cascade Reservoir is refilled this spring. Paul Wagner, NOAA, asked what percentage of the total release will be completed by springtime. Mary stated that roughly 2/3 will be released in the spring.

McNary Flow Objectives

Paul Wagner, NOAA, discussed the McNary flow objectives, noting that the issue at hand is how to manage the available flow in a low flow year. He continued that FPAC discussed the issue and did not come to consensus, however, would like to recommend that the McNary spring flow objectives are prioritized over summer flow objectives, recognizing that models show a slow and steady decrease in flow. He discussed the following McNary Dam spring flow objectives described in the Water Management Plan.

The spring flow objective at McNary Dam is set according to the April final runoff volume forecast at The Dalles Dam for April to August. When the forecast is less than 80 Maf the flow objective will be 220 kcfs. If the forecast is between 80 Maf and 92 Maf the flow objective will be linearly interpolated between 220 kcfs and 260 kcfs. If the forecast is greater than 92 Maf the flow objective will be 260 kcfs.

Based on these criteria Paul noted this year's spring flow objective at McNary Dam is 220 kcfs because the April final runoff volume forecast at The Dalles Dam for April to August (72 Maf) was less than 80 Maf.

With a McNary Dam spring flow objective of 220 kcfs and the current STP indicating forecasted inflows at McNary Dam in the range of 170 kcfs Paul suggested targeting a higher flow rate in the range of 180 kcfs after looking at expected precipitation and reservoir inflows going into the spring months. Mary stated that 180kcfs as a weekly average is possible at this point and is not too far outside of the operating elevations; she recommended revisiting the target flows each week.

Charles Morrill, WA, asked how elevations will be effected at Grand Coulee. Sheri Sears, Colville, stated Grand Coulee is currently at 1,252ft and BPA indicated increasing flow to 180 kcfs as measured at McNary Dam for a week could result in drafting Grand Coulee down to 1,249ft next week. More details about how flows impact GCL elevations can be found on the SRDs can be found on the TMT website (<http://www.nwd-wc.usace.army.mil/cafe/forecast/SRD/srd.htm>), however, Robyn MacKay, BPA, noted that generally 1 foot of water from GCL can supply 10kcfs for a week at McNary. Sheri shared that the Colville Resident Fisheries Program will meet next week to discuss further, however, at this point plan to hold off on the fish release until after Grand Coulee is back up to 1,252ft. Charles stated if that if the plan is to hold off of the release, then he approves of the operation to move 180kcfs to MCN.

- **ACTION:** Starting Friday, May 1, the AA's will operate Grand Coulee to provide McNary with a weekly average outflow of 180kcfs. The operation will be revisited and revised if needed at the May 6th TMT meeting.

Operations Review

Reservoirs: Mary Mellema, BOR, reported on Reclamation projects:

- Grand Coulee elevation was 1,252ft. The drum gate maintenance is expected to be completed by May 9th.
- Hungry Horse elevation was 3,538.5ft with 7.2kcfs outflow; outflow will be held at 5.8kcfs on May 4th for four days for a unit outage.

Lisa Wright, COE-NWD, reported on Corps projects:

- Libby was at elevation 2,420.5ft , with 10.3 inflow and 8kcfs outflow.
- Albeni Falls was at elevation 2,054.7ft, with 33.9kcfs inflow and 23.1kcfs outflow.
- Dworshak was at elevation 1,586.5ft with 6.1kcfs inflow and 7.5kcfs outflow.
- Lower Granite average inflow was 48.7kcfs.
- Bonneville average inflow was 163.1kcfs.
- McNary average inflow was 161.5kcfs.

Steve Hall, USACE- Walla Walla, provided an update on the Dworshak operations, noting that the project is currently lower than the end of the month target of 1,586.5 ft. Paul Wagner shared an FPAC recommendation to draft to 1,585.5ft with a 7.5kcfs outflow, recognizing that water released now will not be available for refill later. Steve Hall cautioned that this operation will exhaust the remaining available water and likely result in a fast dropdown to 5kcfs and again to 2.5kcfs mid-May to ensure a reliable chance of refill. Steve also noted that the water supply

forecast for the DWR basis is currently at 70% of normal and he is expecting this week's run to show a 20% decrease. Jim Litchfield, MT, requested the Corps provide a graph illustrating the volume allocations for the season, including minimum flows, refill volumes and the remaining discretionary volume available for augmentation.

- **ACTION:** The Corps will provide a graph of water allocations at the May 6th TMT meeting.

Doug Baus reported on the elevated MOP levels at Little Goose, he stated that from April 16-April 20th the operation went to MOP +0.5 for navigation safety purposes. He also noted that collection of fish for transport will begin at 0700 hours May 1 at Lower Granite, Little Goose, and Lower Monumental Dams and barging will begin on May 2.

Fish: Paul Wagner, NOAA, reported on fish. For juveniles, 250,000 yearling Chinook passed Bonneville as of April 25th, Lower Granite peaked at 197,000 this year and Lower Monumental has yet to hit peak passage. Overall, numbers for juveniles are high for this time of year at all projects. Smolt passage for Chinook and Steelhead at Lower Granite is around 40%; Little Goose, Lower Monumental, Rock Island and McNary are also seeing typical passage numbers for this time of year. Sub-yearling Chinook released from Spring Creek passed Bonneville peaking at 105,000. Lamprey numbers are limited as it is still early in the season, John Day numbers are few and none have passed Bonneville yet. For adults, 114,000 spring Chinook passed Bonneville, which is 330% of the 10 year average; the NOAA forecast for Bonneville projects 165,000 spring Chinook. Lower Granite is trending toward an early run with 7,320 spring Chinook passing, 900% of the 10 year average.

Water Quality: Tina Lundell, COE-NWD, reported on water quality, noting that all forebay and tailwater gauges are operating. She noted there were a total of 10 TDG exceedances this past two weeks at Ice Harbor forebay, one at Little Goose forebay, and two at Bonneville forebay. Lower Monumental TDG hit 126.9 on April 5th due to a gauge malfunction. She also noted that water temperatures in the Ice Harbor forebay are up to 53 degrees Fahrenheit, which she will compare to last year's temperatures and report back.

Power System: Nothing to report.

The next TMT meeting will be a face to face meeting on May 6th at 9:00am.

Columbia River Regional Forum
TECHNICAL MANAGEMENT TEAM OFFICIAL MINUTES

April 29, 2015
Minutes: Pat Vivian

1, Introduction

Representatives of the COE, BPA, Oregon, NOAA, Montana, USFWS, Idaho, CRITFC/Umatilla, BOR Colville Tribe, ODEQ and others participated in today's TMT meeting. Doug Baus, COE, chaired the discussion and Emily Plummer, DS Consulting, facilitated. This summary is an official record of the proceedings, not a verbatim transcript.

2. Review April 15 Meeting Minutes

There were no changes to the official minutes or facilitator's summary so both were declared final.

3. Spring Creek Hatchery Release

The second and final group of slightly more than 4 million tule fall Chinook subyearlings were successfully released on April 27, a week earlier than planned due to a parasitic infection. Joe Skalicky, USFWS, reported that resulting mortality rates were 0.15%-0.21% per day for the first release. Because the cure for these fish is to reach salt water, it is hoped the second release will migrate to the estuary quickly.

4. Snake River Flow Augmentation

Mary Mellema said BOR still expects to release 427 kaf of flow augmentation from the Snake River system this year, but details of where the water will come from are still being worked out. Approximately two-thirds of the 427 kaf will be released to support spring migrants. The Boise system will begin releasing 700 cfs of flow augmentation on May 1, and the Snake basin above Milner will follow with 2 kcfs beginning on May 11. Releases from the Payette basin are on hold until refill of Cascade reservoir is more certain.

5. McNary Flow Objectives

FPAC wrestled with how to manage flows in a low-flow year like this one, given the tradeoffs between spring and summer passage needs, Paul Wagner, NOAA, reported. This is prime time for spring migrants, but water released now will not be available to help summer migrants when flows dwindle from June to August. The current STP has Bonneville Dam inflows of approximately 170 kcfs which is almost a 20 kcfs decrease from last week's inflow forecast.

He discussed the following McNary Dam spring flow objectives described in the Water Management Plan.

The spring flow objective at McNary Dam is set according to the April final runoff volume forecast at The Dalles Dam for April to August. When the forecast is less than 80 Maf the flow objective will be 220 kcfs. If the forecast is between 80 Maf and 92 Maf the flow objective will be linearly interpolated between 220 kcfs and 260 kcfs. If the forecast is greater than 92 Maf the flow objective will be 260 kcfs.

Based on these criteria Paul noted this year's spring flow objective at McNary Dam is 220 kcfs because the April final runoff volume forecast at The Dalles Dam for April to August (72 Maf) was less than 80 Maf.

In the past 70 years, 15 of them were too dry to provide weekly average flows of 220-260 kcfs at McNary. This year definitely falls into that category.

While there was no clear FPAC consensus on a specific flow objective, Wagner advocated at least 180 kcfs weekly average at McNary beginning May 1, with subsequent decisions about McNary flows to be made at TMT on a weekly basis. Mellema agreed that a weekly average of 180 kcfs is a realistic flow target, with ongoing reevaluation.

Charles Morrill, Washington, and Erick Van Dyke, Oregon, asked about the impact of a 180 kcfs McNary flow objective on the reservoir elevation at Grand Coulee. It probably equates to 2-3 ft of elevation, bringing Coulee down from its current elevation of 1252 ft to 1249 ft, Mellema and Scott Bettin, BPA, said. Providing one week of 10 kcfs inflow at McNary is roughly equivalent to 2 ft of draft at Coulee, Robyn MacKay, BPA, added.

Sheri Sears said the Colville Tribe would prefer that Coulee attain an elevation of 1252 ft on May 20 to support hatchery releases, as lower elevations than that tend to create entrainment issues. With that clarification, Washington supported average releases of 180 kcfs from McNary over the next week. TMT will revisit McNary flow objectives at its next meeting May 6.

6. Operations Review

6a. Reservoirs. Hungry Horse is at elevation 3538.5 ft, releasing 7.2 kcfs for VARQ flood control until May 4. At that time, discharges will be reduced to 5.8 kcfs for 4 days due to unit outages. Grand Coulee is at elevation 1252.0 ft, with drum gate maintenance on schedule to be completed May 9. Libby is at elevation 2420.5 ft, with average inflows of 10.3 and outflows of 8 kcfs. Albeni Falls is at elevation 2054.7 ft with inflows of 33.9 kcfs and releases of 23.1 kcfs. Lower Granite is releasing average flows of 50 kcfs, McNary is releasing 165.5 kcfs, and Bonneville is releasing 161.1 kcfs.

Dworshak operations update: Dworshak reservoir is at elevation 1586.5 ft with inflows of 6.1 kcfs and releases of 7.5 kcfs. In light of current conditions, FPAC debated over whether to recommend 10 kcfs discharges at Dworshak or drop to 5 kcfs and finally settled on the 7.5 kcfs recommendation that was implemented, Wagner reported. The tradeoff in this recommendation is more flows now vs. more certainty of refill and potential use of water later in the passage season.

At 1586.5 ft, Dworshak reservoir is already quite a bit lower than its end of month flood control target of 1590.7 ft, Steve Hall, COE, noted. If 7.5 kcfs outflow continues for another week, the project will draft to approximately 1585.5 ft by the end of next week. While the COE is willing to extend 7.5 kcfs outflows through May 6, Hall asked for acknowledgement this operation will exhaust quite a bit of the remaining water. It probably means dropping to 5.5 kcfs releases after May 6, then having to drop releases even lower. By mid to late May, releases could be down to 2.5 kcfs to give the project a reliable chance of refilling. One big unit and one small unit will operate for the next week (7.5 kcfs), then the project will drop to one big unit only (5.5 kcfs), and eventually one small unit (2.5 kcfs).

Hall cautioned TMT that the water supply forecast, currently at 70% of normal, is likely to drop to 50% of normal when the official May water supply forecast is released. Most likely there is less water available than the latest STP data show. While the current STP forecasts approximately 1.38 MAF of runoff from April to July, Hall said it's probably closer to 1.2 MAF. Continuing the present operation of 7.5 kcfs could result in a rapid ramp-down of flows in May and might also lead to refill issues. The COE will continue the present operation until May 6, when TMT will meet again and review the updated Dworshak water supply forecast.

Jim Litchfield, Montana, recalled that the COE used to provide TMT with a graphic depiction of water volumes required for fill and minimum flows. The graph helped TMT make flow augmentation decisions about how to use remaining water. Wagner said he will find it and work with the COE on using it to help TMT make in-season management decisions about Dworshak this year.

Little Goose MOP update: At its last meeting April 15, TMT talked about implementing MOP + 0.5 ft at Little Goose for navigation safety, which equated to a project forebay elevation of 633.5-634.5 ft. The COE implemented that operation from April 16-20. This issue tends to arise on both the ascending and descending limb of the hydrograph, whenever inflows are less than 50 kcfs and depth at the Lower Granite downstream lock entrance is insufficient for safe barge transit. Baus gave TMT a heads-up that it will probably recur this year.

Juvenile transportation update: As defined in the 2015 FOP, collection of juveniles for transport at Lower Snake River projects will begin at 7 am on May 1 at all three collector projects and barging will begin the following day.

b. Fish. Wagner reported.

Juveniles: Yearling chinook passage at Lower Granite peaked with an index count of 152,000 on April 25 and is tapering down. The peak index count at Little Goose was 90,000. Lower Monumental hasn't seen its juvenile peak yet. Lower Columbia projects—McNary, John Day and Bonneville—are all seeing increasing numbers of fish. This year's Spring Creek Hatchery release of subyearling chinook has already passed Bonneville, as reported earlier today. At Bonneville, steelhead passage peaked with an index count of 105,000 on April 26. Subyearling chinook have already passed Bonneville; see the Spring Creek Hatchery Release discussion above. At Lower Granite, steelhead passage peaked at 105,000 smolts on April 26, and at Little Goose a few days later. Approximately 40% of the steelhead run have already passed Lower Granite and Little Goose. McNary is following typical trends for smolt passage this year. Lamprey passage hasn't started yet, with only a few at John Day and none at Bonneville. Wagner emphasized that the next few weeks are prime passage time. It will be important to maintain flows through June.

Adults: This year has brought the earliest return of spring chinook in large numbers on record—114,000 at Bonneville to date, which is 330% of the 10 year average for this time of year. Yesterday alone there were 17,000 adult returns. The forecast of 165,000 chinook returning to Bonneville in May was based on ocean conditions and other factors; the April count is rapidly approaching the May forecast. According to DART data, Lower Granite is following the same trend, with 7,320 arrivals, which is 900% of the 10 year average for this date. DART data indicate that fish are showing up early in large numbers at all projects throughout the river system. Only time will tell whether these unprecedented numbers are the start of a big year for adults or just an early year.

c. Water Quality. Tina Lundell, COE, reported. All forebay and tailwater gages are operating well. Since TMT last met, there was a TDG exceedance on April 21 in the Little Goose forebay, and several exceedances in the Ice Harbor forebay with a peak of 120%TDG saturation when Lower Monumental outflows (spill) were 28 kcfs. Outflows (spill) were reduced to 28 kcfs on April 19, and the TDG levels dropped at Ice Harbor 4-5 days later. Spill outflow was reduced again on April 28, to 26 kcfs. Wagner commented the COE is doing a good job of controlling TDG levels this year; the Snake River exceedances were due in large part to lack of wind. When the wind picked up again on April 25-26, TDG levels dropped. There were a few exceedances in the Bonneville forebay on April 20-21, probably due to a heat wave. Erick Van Dyke, Oregon, asked whether Lower Monumental is on bulk spill now; the answer was yes. Water temperatures in the Ice Harbor forebay have been creeping up over the past few days, Lundell noted.

d. Power. There was nothing new to report. Scott Bettin reminded TMT that this is a refueling year for the Columbia Generating Station.

7. Next TMT Meeting

TMT will meet in person on May 6, with updates on Dworshak operations, McNary operations and Snake River flow augmentation on the agenda. TMT will also be asked to consider two SORs regarding Libby operations, one for the sturgeon pulse and another for bull trout habitat restoration.

<i>Name</i>	<i>Affiliation</i>
Tina Lundell	COE
Laura Hamilton	COE
Scott Bettin	BPA
Erick Van Dyke	Oregon
Robyn MacKay	BPA
Lisa Wright	COE
Doug Baus	COE
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Shane Scott	PPC
Polly Calvert	ODEQ
Bill Rudolph	NW Fish Letter
Charles Morrill	Washington